NOTICE

All drawings located at the end of the document.

Closure Description Document for

RCRA Closure of Tank and Ancillary Equipment System

#32 in Building 771

U.S. Department of Energy
Rocky Flats Environmental Technology Site
EPA ID No. CO7890010526

Reviewed and Approved by:

T.C. Baker, Environmental Compliance, RMRS — 5/13/99 Date

Prepared by:

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REVIEWED FOR CLASSIFICATION/UC
By
Date 13 MAY 99

ADMIN RECORD 1/20

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1.0 INTRODUCTION

1.1 Purpose and Scope

The Rocky Flats Environmental Technology Site's (RFETS) *RCRA Closure Plan for Interim Status Units* (Closure Plan) includes the Mixed Residue tank systems and the Idle Equipment tanks in Building 771. Decommissioning and removal of tanks and their ancillary piping and other equipment are subject to the Closure Plan and a subsequent Closure Description Document, which contains a description of the method of closure to be used. A two-step strategy will be employed: (1) wherever possible, meet the requirements for the "RCRA Stable" condition while the tanks remain in place, and (2) remove the tanks from the building at a later date.

The process piping in Building 771 has been divided into thirty-eight discrete "piping systems," with tanks and other ancillary equipment included. Thirty-five of these systems contain process piping connected to RCRA-regulated tanks. In order to prepare for building deactivation and to facilitate closure activities, each tank will be isolated by removing the process piping connected to it. Some tanks are connected to more than one process piping system. Once a tank has been isolated from **all** process piping systems to which it has been connected, it will be reported in the closure documentation as "RCRA Stable" if the requirements for the "RCRA Stable" condition, as described in the Closure Plan, have been met.

This Closure Description Document applies to System #32 in Building 771, also known as the Scrub Alloy System. Since there are no tanks directly associated with this system, the Closure Description Document applies only to the removal of the process piping:

a. Phase I: Removal of process piping connecting five individual gloveboxes.
b. Phase II: There is no Phase II for this system.

1.2 Unit Closure Notification and Schedule

The Colorado Department of Public Health and Environment (CDPHE), Hazardous Materials and Waste Management Division will be notified at least 45 days prior to the start of closure activities. The identified closure activities will be conducted immediately after the 45-day notification period, and are expected to be completed within 180 days. If closure activities cannot be completed within 180 days, a request for extension will be submitted to the Division at least 30 days prior to the end of the 180 days.

Phase I activities for all systems are expected to be scheduled during the August 24, 1998 to December 30, 2001 time period. Phase II activities will be scheduled through the Rocky Flats Cleanup Agreement (RFCA) annual budget planning and Integrated Sitewide Baseline (ISB) process.

Within 30 days after completion of closure activities, a report will be submitted to CDPHE briefly summarizing the closure activities conducted in accordance with this Closure Description Document. The Phase I summary report shall contain the following:

- confirmation that the piping indicated in the submitted drawings has been removed;
- descriptions of any significant deviations from this Closure Description Document;
- a copy of any newly-generated drawings; and
- a summary of relevant analytical results.

1.3 Facility Contacts

The contacts for closure activities at RFETS are:

Assistant Manager
For Environment and Infrastructure
Rocky Flats Field Office
U.S. Department of Energy
P.O. Box 928
Golden, CO 80402-0928
(303) 966-4298

Division Manager
Environmental Systems
and Stewardship
Kaiser-Hill Company, L.L.C.
P.O. Box 464
Golden, CO 80402-0464
(303) 966-9876

2.0 BUILDING 771 FACILITY DESCRIPTION

According to the *Building 771/774 Closure Project Decommissioning Operations Plan* (DOP) and its references, Building 771 was used for production activities involving plutonium and other actinides in a wide variety of processes between 1951 and 1989. During this time, there was considerable variation in the processes, as well as several upsets that resulted in radiological contamination of the facility.

The current scope of decommissioning activities under the DOP includes decontamination, stripout, removal, size reduction and packaging of process and utility equipment, such as gloveboxes, tanks, piping, etc., and demolition of internal non-load-bearing structures as necessary to facilitate these activities.

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3.0 METHOD OF CLOSURE AND PERFORMANCE STANDARD

The process piping system described herein will be closed by the method described as "Unit Removal" in the Closure Plan, Section E. All liquids will be drained from this piping system, to the extent practicable, prior to the start of closure activities.

The performance standard is removal of all process piping in System #32 from Building 771, as indicated in Figures 1-4.

4.0 UNIT DESCRIPTION AND WASTE CHARACTERIZATION

The piping for System #32 consists of 1-inch diameter mild steel pipe lined with Kynar™. It was used to transport plutonium and uranium in a hydrochloric or nitric acid solution among five separate gloveboxes by applying vacuum at the receiving location. This piping is not connected directly to any tanks. Moderately high levels of radioactive contamination are currently expected inside the piping.

A narrative description of this system is given in the "System Descriptions and Boundaries" sheet (Attachment 1), Section K, and a description of piping removal scope is given in Section L. Equipment drawings are attached as Figures 1-5. The total length of piping to be removed is estimated to be 630 feet, along with the removal of eleven valves. Five termination points (TPs) are shown in Figures 1-4, and are labeled consecutively. Containment at the TPs will be designed and implemented to protect the room environment from release of contaminants remaining in disconnected systems. Any significant changes to Figures 1-5 will be submitted to CDPHE with the summary report.

During closure activities, the transfer lines indicated in Figures 1-4 will be disconnected and removed. The presence of the Kynar™ lining may require a different removal method from that used with earlier systems. Pipe sections may be disconnected at flanges or separated by crimping rather than being cut into smaller sections. Additional difficulties will be encountered with the three sections of piping enclosed in a 5-inch metal chase pipe and shown in Figures 1 and 2. These sections impose some special removal constraints, i.e. there may not be enough space available to extract them to the next flange joint, and a different vacuum source will be used to maintain negative pressure on the pipe section at the time of separation. If the pipe cannot be extracted safely, the chase pipe will be cut away.

EPA waste code D002 (corrosivity) is assigned to the liquids and removable sludges present in this system based on process knowledge.

This system contained radioactive liquid; therefore, internal radioactive contamination is anticipated. Prevention of release and minimization of work exposure will be addressed in the preparation of the Integrated Work Control Program (IWCP) work package, as described below.

5.0 SPECIFIC CLOSURE ACTIVITIES

Activities will be designed to achieve the closure performance standard, protect human health and the environment, and minimize waste. Specific work instructions, with engineering, health and safety, and waste management information, will be developed prior to the start of identified closure activities. These instructions will be developed in accordance with applicable RFETS policies and procedures.

Closure activities are summarized as follows:

5.1 Establishment of Tank System Boundaries and Scope of Removal

The boundaries for System #32, as described in Attachment 1, define the extent of closure activities for this closure description document. The boundaries are at or near flanged joints. At TPs where release of contamination and worker exposure are of concern, a relatively short pipe stub will be used, with or without an open flange (length is dependent on field conditions). This type of TP will be sealed and therefore contained by two layers of plastic sleeving taped to the stub.

During closure activities, all overhead piping between the joints nearest the HC-1 glovebox outlet in Room 153 and those nearest the points of entry into gloveboxes K-30, Line 1, MT-2 and MT-4, as indicated in Figures 1-4, will be removed, and the remaining piping capped as shown in Figure 5.

System #32 piping located inside gloveboxes will be removed when the glovebox is disassembled, to minimize worker exposure and cost. At that time, the waste will be characterized and managed accordingly.

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5.2 Preparation of Engineering and IWCP Work Package

A unit-specific IWCP/engineering design package will be prepared for System #32. The RFETS Health and Safety Practices Manual defines the general health and safety measures to be followed at the Site. Closure activities will be conducted in accordance with this manual, incorporating the results of job-specific industrial and nuclear safety-related evaluations and screens.

The IWCP/engineering work package will be used to control work, including preparation of equipment, specification of personal protective equipment, methods of pipe removal and size reduction, methods for containing liquids and preventing releases to the environment, and waste packaging.

As Low As Reasonably Achievable (ALARA) principles will be followed regarding personnel exposures to radiation. Radiological containment will be provided during pipe cutting activities by the use of soft-sided structures such as glovebags, sleeves and/or portable housing. Larger containments may be constructed for dismantlement and size reduction of tanks and associated equipment. Following size reduction, equipment pieces will be inspected and placed into a waste container attached to the bottom of the containment.

The air pressure inside containment will be maintained negative to the room air through the use of a portable air mover or by connection to the building exhaust system. Each process room is maintained at negative pressure relative to the surrounding building or outside atmosphere by the building room exhaust system, which prevents the escape of radiological or hazardous substances to the environment. If an air mover is used, the exhaust will pass through a filter, if necessary, to trap particulates.

5.3 General Methodology for Piping Removal

Each section of System #32 will be drained by tapping into low points and applying vacuum at each point until no additional liquid can be removed, prior to removal of that section. The system should then be free of liquids. However, it is possible that residual liquids may be encountered during piping removal. The removal method employed will include provisions to contain residual liquids and/or sludges, which may contain high levels of radioactive contamination. Any resulting liquids or sludges will be characterized and treated for final disposal per waste acceptance criteria.

If a blockage is encountered that cannot be cleared readily during the tap and drain process, additional taps will be installed to minimize the length of the blocked section. Blocked sections will be removed with provisions to contain trapped liquids that may be present. These sections will be size reduced in a manner that accommodates the possibility that trapped liquids may be released to containment. A drainage path will be established through any remaining blockages to ensure that all liquid can be drained from the pipe. If significant blockages are encountered during tap and drain activities, piping removal may be conducted in conjunction with those activities.

Piping removal, size reduction and packaging activities are considered to be dynamic processes, in which improvements in technology will be implemented as a result of newly available methods or lessons learned from prior piping removal operations. The piping removal steps described below may be modified in response to actual operating conditions. Possible modifications include the manner in which the pipe sections are separated, the type of containment used as a pipe section is removed, the manner in which vacuum is maintained at the point of pipe separation and the type of containment used for size reduction.

Piping is intended to be removed in the following manner:

a. A glovebag or plastic sleeving will be installed around the section of piping to be removed.
b. At a TP, the flange will be disconnected or the pipe cut and the remaining pipe stub will be contained by two layers of plastic.
c. Vacuum will be applied at one or both ends of a pipe section, and removal will proceed toward a vacuum source.
d. The pipe sections will be separated by the best available method (e.g., disconnecting at the flanged joint, four-wheel cutter, pipe crimping tool).
e. After the pipe section ends are separated from the rest of the pipeline, the ends of the glovebag/sleeving will be twisted into a "pigtail" formation, from which the ends of the bag can be cut and taped. The pipe section can now be removed with taped plastic containment at both ends.
f. If any residual liquid or sludge is observed at either end of the removed pipe section, that section will be immediately bagged into the size reduction containment, to be size reduced and inspected. The recovered residual liquid and/or sludge will be collected, then stored in an approved RCRA storage area.

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g. If no residual liquid or sludge is observed at either end of the pipe section, it will be brought to the size reduction area at an appropriate time.
h. Piping sections will be size reduced, as necessary, using an approved cutting method. Crimped pipe sections must be size reduced.
i. Pipe sections will be allowed to drain, in a vertical position, as required.
j. Pipe section ends will be inspected visually to determine whether a blockage is present within the section.
k. Blockages in pipe sections will be penetrated by mechanical means to drain any trapped liquid.
l. Pipe sections will be drained of any remaining liquids or sludges, then placed into waste containers. Residual materials will be sampled and immobilized.

The contents and condition of the interior of the pipe section will dictate its disposition as waste. Three typical cases may be encountered:

- The interior surface is dry and contains no visible sign of hazardous waste holdup, so that the pipe section can be disposed as non-hazardous waste. This case is expected for all pipe sections in System #32.
- The pipe section contains solid residual material adhering to the interior walls, which cannot be removed readily. The pipe section will be managed as hazardous or non-hazardous waste, based on analytical results for a representative sample of the material.
- A removable blockage or mobile sludge is found, and is removed from the pipe section and sampled. EPA codes are assigned to the sludge based on process knowledge or analytical results, and the sludge is treated to meet applicable waste acceptance criteria. The pipe section will be disposed as hazardous or non-hazardous waste, after a hazardous waste determination has been made.

Each IWCP work package, which will be prepared prior to the start of closure activities, will include more specific and detailed instructions for the sequence of piping removal steps, removal and size reduction methodology, and removal of residual materials from pipe sections.

6.0 SAMPLING AND ANALYSIS

Sampling and analytical methods, and quality assurance standards, are addressed in this section.

6.1 Sampling Methods

Methods used to collect samples are authorized in 6 CCR 1007-3, Part 261, Appendix I, and the Liquid Residue Treatment Waste Characterization Plan for Process Piping Removal. Specific methods will be selected on the basis of ease with which representative samples can be collected, sampling location, sampling matrix, sample container type and size, and accessibility, as well as to maximize the value of data and minimize the number of samples needed.

Sampling of liquids is performed using the procedure entitled, Solution Bottle Handling Building 771, PRO-D02-CO-1131. The solution is mixed while in a bottle to assure homogeneity prior to sampling. Solid material sampling is performed using the procedure entitled, Laboratory Sampling Procedure, CAS-SOP-003.

6.2 Analytical Methods and Location

Analytical work will be performed in an RFETS approved laboratory. The analytical test methods for waste characterization are consistent with the approved methods in the Site RCRA Part B Permit, Part VI, Waste Analysis Plan.

6.3 Quality Assurance

The applicable RFETS Field Operating Procedure, 5-21-000-OPS-FO, or equivalent procedure(s), will be used to ensure the integrity of representative samples and analytical data.

7.0 DISPOSITION OF CLOSURE-RELATED WASTES

Metal, combustible and liquid/sludge wastes may be generated during closure activities. It is assumed that the Site waste management and treatment systems will be available to receive wastes generated by these closure activities.

Piping system components and pieces which are radioactively contaminated will be managed in accordance with the requirements of the RFETS Radiological

Control Manual and Health and Safety Practices Manual, and will be packaged for disposal in accordance with applicable waste acceptance criteria. All metal waste from this system is expected to be either low level waste (LLW) or transuranic waste (TRU), depending on the amount of actinide present, and will be characterized in accordance with applicable regulations. Pipe sections completely free of any holdup will be managed as non-hazardous waste because there were no listed wastes in this system, and their materials of construction do not exhibit any characteristics of a hazardous waste. If the metal waste is determined to be hazardous debris, then an approved extraction technology may be implemented; however, hazardous debris is not expected for System #32.

Wipes and other combustible materials that are used to clean surfaces or to immobilize free liquids will be placed into waste drums, characterized and managed in accordance with applicable regulations. Other combustible wastes, including PPE and plastic containment void of any hazardous constituents, will be managed as non-hazardous radioactive waste. All waste drums will also be analyzed by non-destructive assay to categorize them as LLW or TRU and they will be stored in an appropriate onsite storage area prior to offsite disposal.

The only liquids expected to be generated during closure activities are the residual liquid holdup in the piping. Liquid inventory in the piping, except for incidental amounts that may be absorbed onto wipes, may be drained into 4-liter bottles. The bottles would be placed into permitted or otherwise compliant storage areas and managed in accordance with applicable regulations. The contents of the bottles may be transferred to tank D-544 and the entire tank contents sampled and analyzed for RCRA characteristics prior to draining. Liquids in bottles destined for the Miscellaneous Cementation treatment process or the Caustic Waste Treatment process will be sampled and analyzed for final characterization prior to transfer.

Any mobile sludge found in components during closure activities will be removed or immobilized in situ prior to packaging for disposal, in accordance with applicable waste acceptance criteria. If process knowledge is not adequate, then sampling of the sludge is necessary to characterize it properly. System components containing solidified sludge that adheres to the interior walls will be characterized using analytical results for a representative sample of the sludge, and managed in accordance with applicable regulations. The sampling protocol and number of sampling locations will be determined if solid residual material actually is encountered, and will be based on the Waste Characterization Plan.

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8.0 SOIL CONTAMINATION EVALUATION AND POST CLOSURE CARE

The operating history for these tank systems (e.g., building logs, RCRA inspection logs and occurrence reports) indicates that there have been no spills or releases to the environment as a result of waste management activities in these units. Phase I and Phase II closure activities associated with these tank systems are not expected to impact the soils surrounding Building 771. Therefore, soil contamination will be evaluated as part of decommissioning and cleanup activities for the Building 771 complex under RFCA, and post-closure care activities are not necessary as part of the closure of these tank systems.

9.0 RECORDKEEPING

The following closure records will be maintained onsite during closure activities, and at a federal repository for a minimum of 30 years following the report of closure:

- sampling logs, including type, numbers and date of samples;
- analytical results;
- records of actions taken to decontaminate equipment and/or structures;
- work instructions used to conduct closure activities; and
- closure report verifying that closure activities were conducted in accordance with the approved Closure Plan and with this Closure Description Document.

10.0 AMENDMENT OF THE CLOSURE DESCRIPTION DOCUMENT

In conducting closure activities, unexpected events that are identified during the implementation of closure activities may require an amendment to this Closure Description Document. Modifications to this Closure Description Document will be made in accordance with applicable regulations. This Closure Description Document may be augmented or superceded by an approved Building 771 Decommissioning Operations Plan (DOP).

11.0 REFERENCES

1. Code of Colorado Regulations, Vol. 6, No. 1007-3, Part 265, Subpart G, Sections 265.110 through 265.120.
2. Rocky Flats Environmental Technology Site RCRA Permit, Part X: Closure Plan, effective 5/10/98.

3. Rocky Flats Environmental Technology Site Closure Plan for Interim Status Units, effective 7/98.
4. Rocky Flats Environmental Technology Site 1997 Hazardous Waste Tank Systems Management Plan, effective 2/13/98.
5. Backlog Waste Reassessment Baseline Book, an RFETS Level 1 Manual, effective 2/17/98.
6. Building 771 Basis for Operation (BFO), 98-RF-00947, effective 2/27/98.
7. Building 771/774 Closure Project Decommissioning Operations Plan, Rev. 0, effective 12/7/98.
8. Building 771 Liquids Process Piping Removal Waste Characterization Plan, Rev. 0, 12/3/98.

Attachment 1: System Description and Boundaries for System #32

BUILDING 771 TAP & DRAIN/PROCESS PIPING REMOVAL CHARACTERIZATION SHEET

SYSTEM NUMBER	NAME	ENGINEER	REVISION DATE
32	SCRUB ALLOY	JEFF FAUBLE STAN VAN EGMOND	05/03/99

A. START POINT	Room 153
B. END POINT	Room 146
C. CHEMICAL COMPOSITION	9N HCL, 7N HNO_3
D. RAD/ACTINIDE CONTAMINATION	> 6 g/l Pu/U
E. ESTIMATED SYSTEM MAX VOLUME	5 Liters
F. TANKS INVOLVED	None
G. GLOVEBOXES INVOLVED	Room 114; Line 1 (North) Room 146; MT-2 and MT-4 Room 153; Hot Cell HC-1 Room 180K; Glovebox K-30
H. OTHER COMPONENTS	None This system consists of a single pipe that connects the above-mentioned gloveboxes together, with a form of hose connection at the end of the valve located inside each glovebox.
I. SYSTEM INTERFACES	None
J. CHEMICAL COMPATIBILITY AT INTERFACE(S)	This Kynar lined pipe transported primarily uranium/plutonium actinides in chloride and/or nitric acid between Materials Technology (Room 146), Aqueous Recovery Technology (Room 180K), Americium Recovery (Line 1 North in Room 114, and Room 153 (HC-1). Thorium, Cesium, Curium, are other elements known to be handled in small amounts in Room 153. Americium was processed in Line 1 North and Line 30. Do **NOT** mix liquids accumulated from this system with solutions generated from any other system until such time that analytical results verify compatibility.
K. NARRATIVE DESCRIPTION	This 1" Kynar lined mild steel pipe is approximately 630 feet in length, and begins in Room 153 at Hot Cell HC-1. The pipe exits the overhead piping at the south end of Room 153, proceeds south through Corridor D, Room 159, Room 169 Room 180H, and turns East in Room 180 (Hallway).

H

K. NARRATIVE DESCRIPTION (continued)

From the 180 Hallway the pipe enters Room 180K, with a drop in Glovebox K-30. The Kynar lined pipe continues east through Room 180K, Room 172, and northeast through Room 174, into Corridor A.

In Corridor A, the pipe turns north, then east into Room 149, south of Line 29. The pipe turns north above Line 29 and proceeds into Room 114. The pipe turns east and extends through Room 114, with a tee intersection that terminates at Line 1 (North), proceeds east into the Room 146 Corridor, and enters Room 146 in the overhead between Gloveboxes MT-3 and MT-1.

The piping in Room 146 branches off, and terminates at Gloveboxes MT-4 and MT-2.

Each section of Kynar lined pipe is flanged, and bolted together with Viton gaskets. Pipe lengths vary from short elbows to 20' straight lengths.

The solutions generated from this system should be collected and stored separately from other liquids until chemical compatibility can be verified.

L. PIPING REMOVAL DESCRIPTION

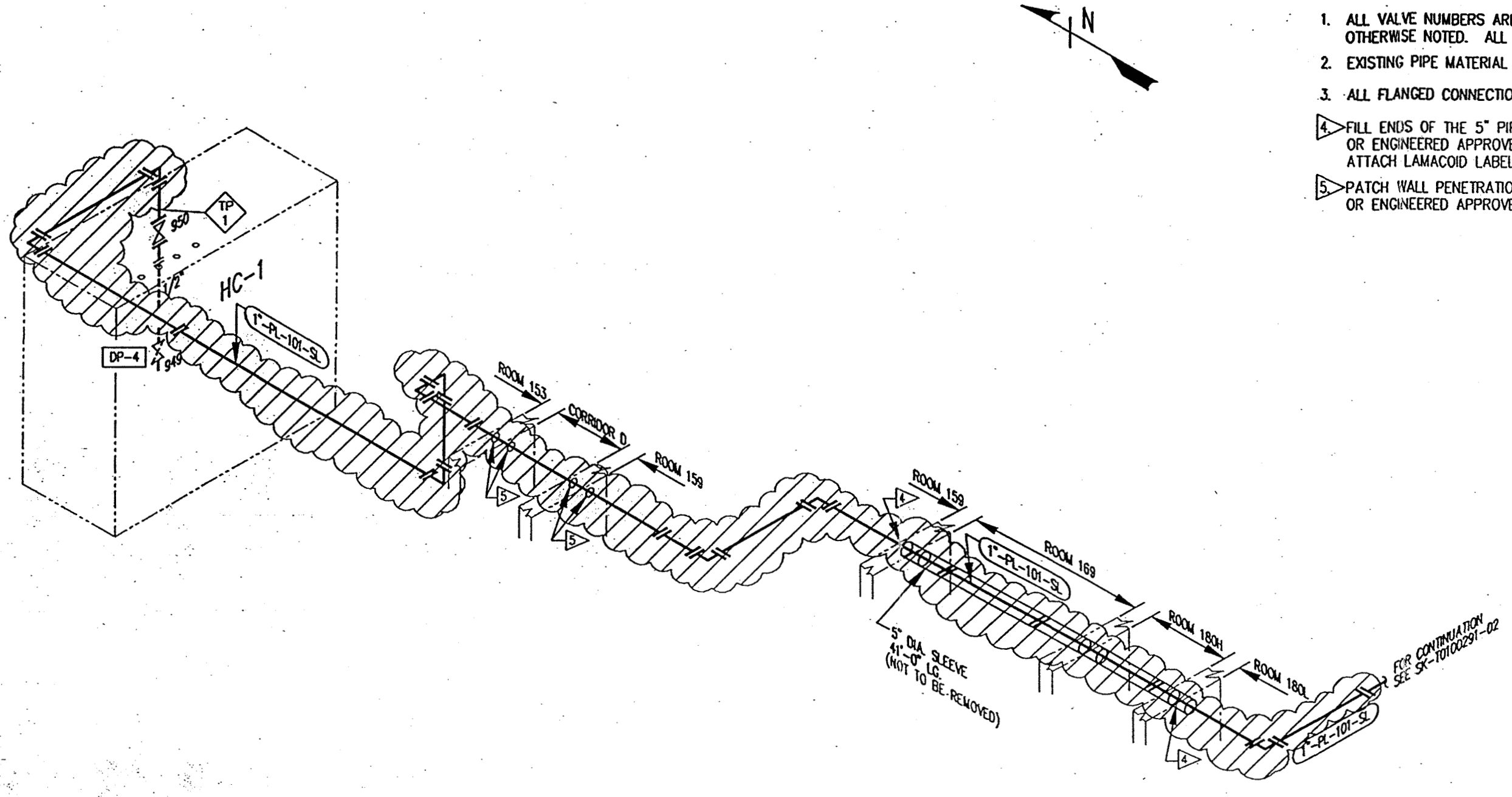
Piping removal can be performed by unbolting sections of pipe, or cutting pipe to length. Piping removal by the 4-Wheel cutter method may not function as efficiently on the Kynar lining as it does on stainless steel. It is recommended that dry run cutting be performed on a cold section of lined pipe, if this method of pipe removal is chosen.

There is 41 feet of pipe that runs through a 5 inch in diameter steel sleeve in Room 169 and 180H, 22 feet in Room 172, and 11 feet in Corridor A. Special consideration must be given for the available working space to pull an entire length of lined pipe through the sleeve or cut/unbolt pipe sections as it is pulled through the sleeve.

Attaching a vacuum source to the piping in two gloveboxes, and removing the piping between the two gloveboxes is ideal, but may not be practical.

Removal of pipe from the furthest point from the vacuum source, working toward the vacuum source is always recommended.

Figure 1: System #32 – Transfer Line from Room 153 to Room 180L



NOTES:

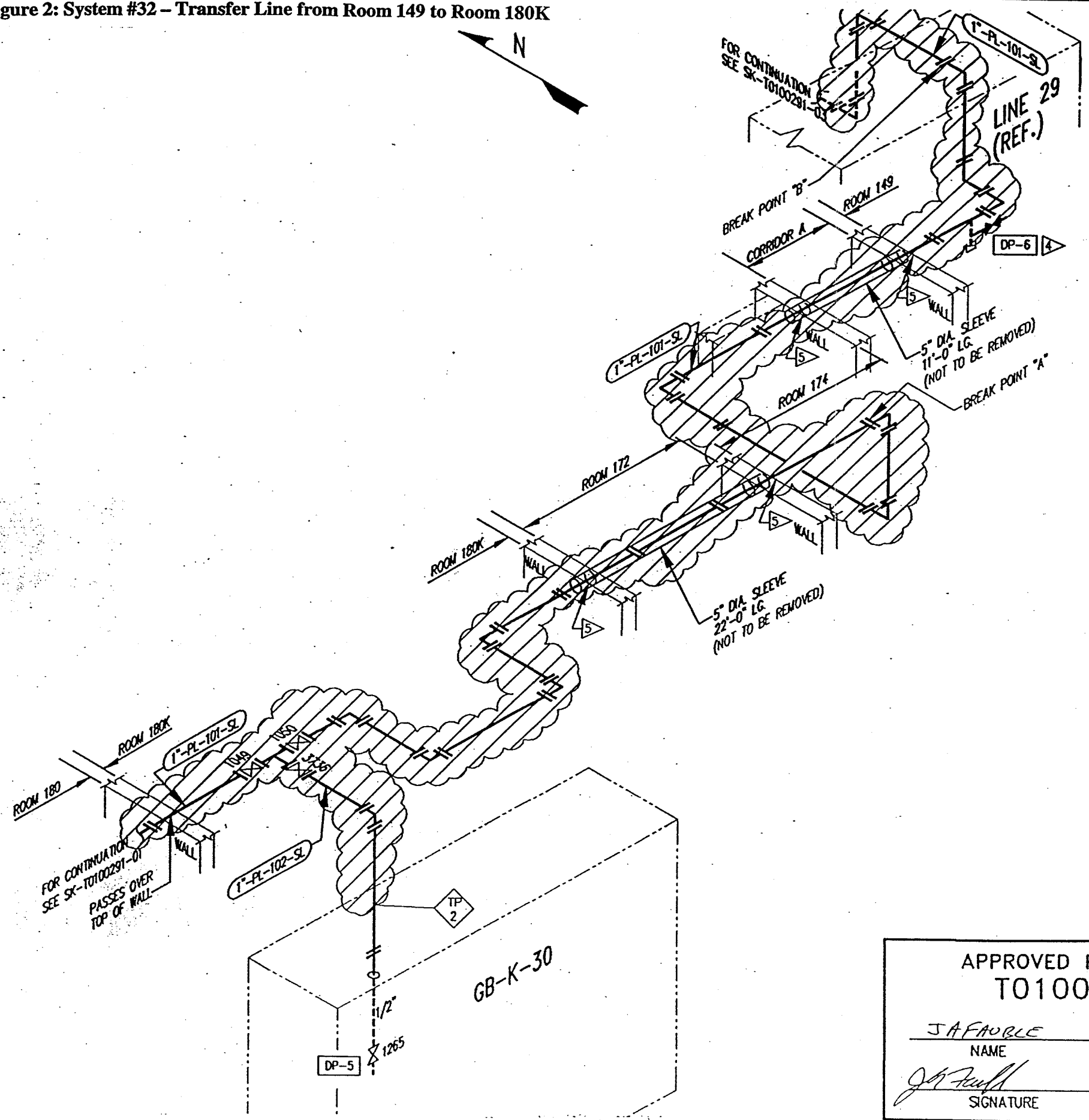
1. ALL VALVE NUMBERS ARE PRECEDED BY "HV" IN THE FIELD UNLESS OTHERWISE NOTED. ALL VALVES ARE FLANGED.
2. EXISTING PIPE MATERIAL IS SARAN-LINED(KYNAR) CARBON STEEL.
3. ALL FLANGED CONNECTIONS ARE WRAPPED IN PLASTIC.
4. FILL ENDS OF THE 5" PIPE SLEEVE WITH 5 STAR GROUT OR ENGINEERED APPROVED EQUAL AFTER PIPE REMOVAL. ATTACH LAMACOID LABEL, "ABANDONED PIPE CHASE".
5. PATCH WALL PENETRATION 5 STAR GROUT OR ENGINEERED APPROVED EQUAL AFTER PIPE REMOVAL.

REVIEWED FOR CLASSIFICATION/UCNI
By Mah T Sda 4/29/99
Date 5-4-99

APPROVED FOR USE
T0100291
J.A. FAUBLE JA Fauble 4-27-99

DRAWN VAN EGMOND	DATE 3/4/99	U.S. DEPARTMENT OF ENERGY
CHECKED Dwills	DATE 4/27/99	ROCKY FLATS AREA OFFICE GOLDEN, COLORADO
CLASSIFIED		ROCKY FLATS PLANT GOLDEN, COLORADO
BLDG/FACILITY 771		PROCESS PIPING REMOVAL-SYS. 32
ROOM/AREA VARIOUS		SCRUB ALLOY
GRID COORD/COL NO.		SIZE / DRAWING NUMBER / SHEET
SCALE NONE		B SK-T0100291-X01 OF
CAD FILE SA-01_X01		

Figure 2: System #32 – Transfer Line from Room 149 to Room 180K



NOTES:

1. ALL VALVE NUMBERS ARE PRECEDED BY "HV" IN THE FIELD UNLESS OTHERWISE NOTED. ALL VALVES ARE FLANGED.
2. EXISTING PIPE MATERIAL IS SARAN-LINED (KYNAR) CARBON STEEL.
3. ALL FLANGED CONNECTIONS ARE WRAPPED IN PLASTIC.

4> INSTALL THIS TAP DURING PIPE REMOVAL ACTIVITIES AND IN ACCORDANCE WITH IWCP INSTRUCTIONS.

5> FILL ENDS OF 5" PIPE SLEEVE WITH 5 STAR GROUT OR ENGINEERING APPROVED EQUAL AFTER PIPE REMOVAL. ATTACH LAMACOID LABEL, "ABANDONED PIPE CHASE".

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By Mah T Bla 4/26/99
Date 5-4-99

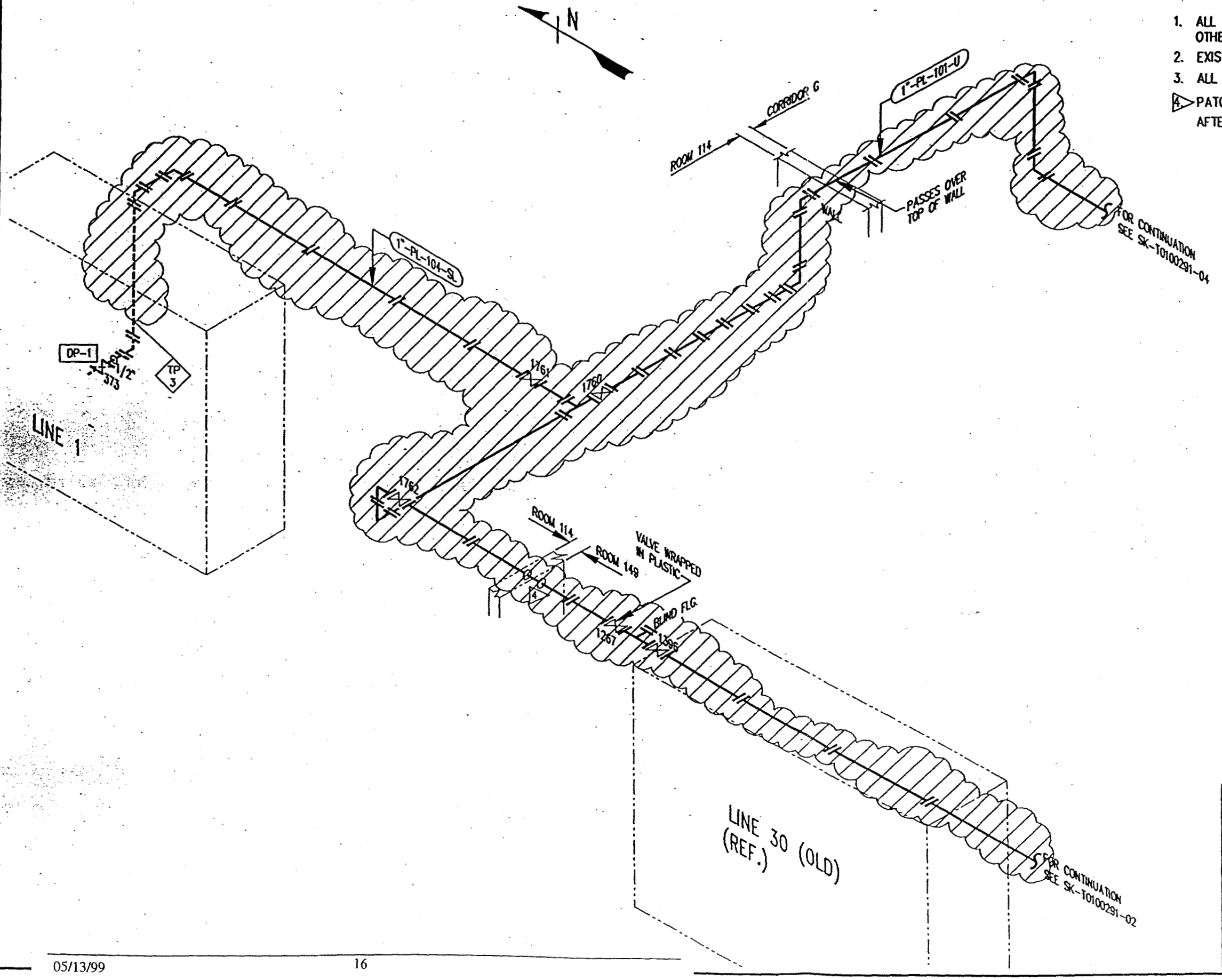
APPROVED FOR USE
T0100291

J A FAUBLE
NAME TITLE

SIGNATURE 4-27-99
DATE

DRAWN VAN EGMOND	DATE 3/4/99	U.S. DEPARTMENT OF ENERGY	
CHECKED	DATE 4/27/99	ROCKY FLATS AREA OFFICE	GOLDEN, COLORADO
CLASSIFIED		ROCKY FLATS PLANT	
BLDG/FACILITY 771		GOLDEN, COLORADO	
ROOM/AREA VARIOUS		PROCESS PIPING REMOVAL-SYS. 32	
GRID COORD/COL NO.		SCRUB ALLOY	
SCALE NONE		SIZE B	DRAWING NUMBER SK-T0100291-X02
CAD FILE SA-02_X02			SHEET OF

Figure 3: System #32 – Transfer Line Between Lines 1(Room 114) and 30 (old) (Room 149)



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2. EXISTING PIPE MATERIAL IS SARAN-LINED (KYNAR) CARBON STEEL.
3. ALL FLANGED CONNECTIONS ARE WRAPPED IN PLASTIC.
4. PATCH WALL WITH 5 STAR GROUT OR ENGINEERED APPROVED EQUAL AFTER PIPE REMOVAL.

REVIEWED FOR CLASSIFICATION/UCNI
By Mak T. Sala 4/14/99
Date 5-4-99

APPROVED FOR USE
T0100291
J A FAUBLE
NAME TITLE
4-27-99
SIGNATURE DATE

DRAWN VAN EGMOND	DATE 3/4/99
CHECKED Trujillo	DATE 4/27/99
CLASSIFIED	
BLDG/FACILITY 771	
ROOM/AREA 114, 149	
GRID COORD/COL NO.	
SCALE NONE	
CAD FILE SA-03_X03	

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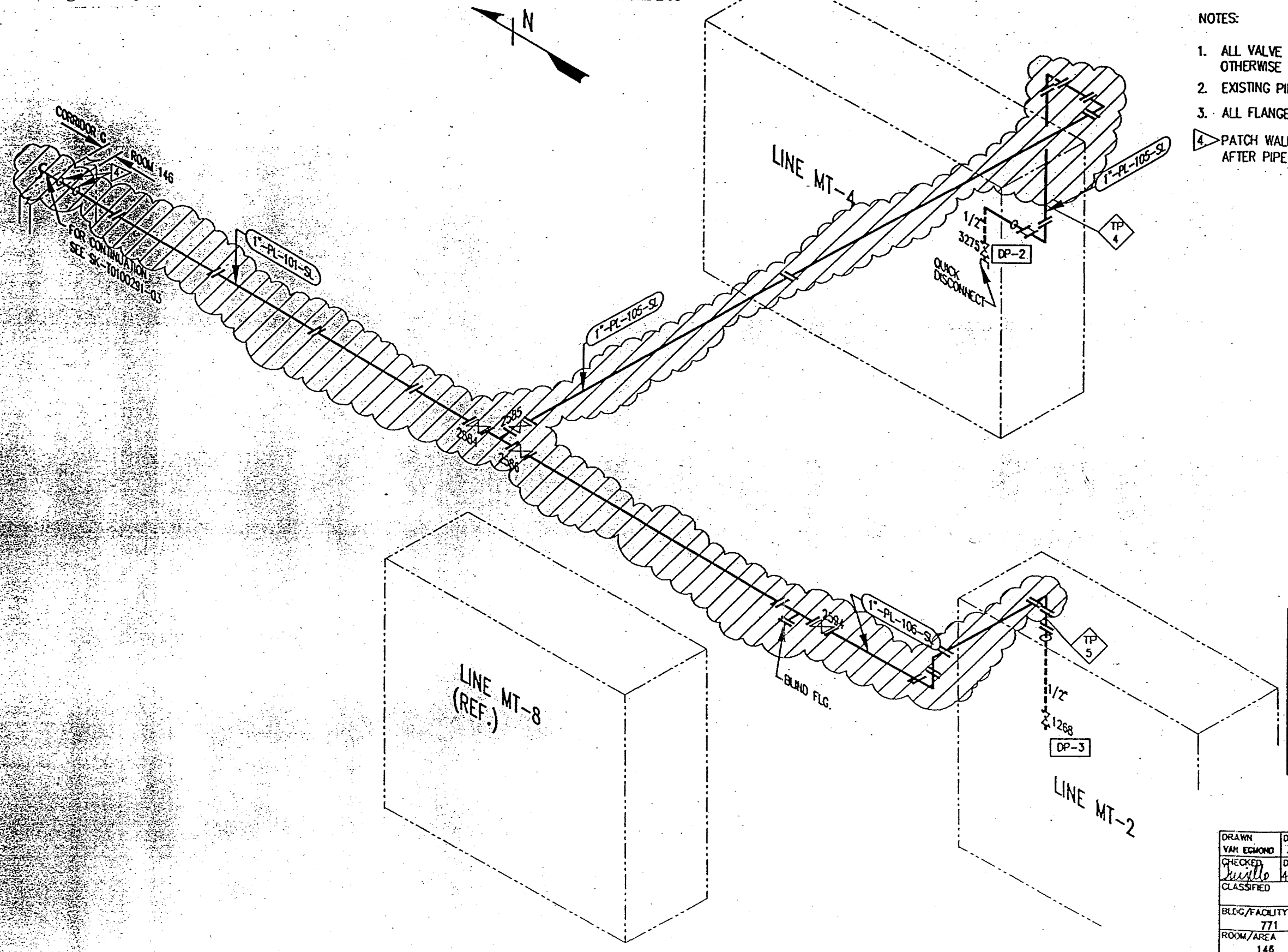
ROCKY FLATS PLANT
GOLDEN, COLORADO

PROCESS PIPING REMOVAL–SYS. 32
SCRUB ALLOY

SIZE	DRAWING NUMBER	SHEET
B	SK-T0100291-X03	OF

Figure 4: System #32 – Transfer Line between Lines MT-2 and MT –4 in Room 146



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By M. L. Tobin UCNI
Date 5-4-99

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NAME	TITLE
J A Fauble	
SIGNATURE	DATE
J A Fauble	4-27-99

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CHECKED Trujillo	DATE 4/27/99
CLASSIFIED	
BLDG/FACILITY 771	
ROOM/AREA 146	
GRID COORD/COL NO.	
SCALE NONE	
CAD FILE SA-04_X04	

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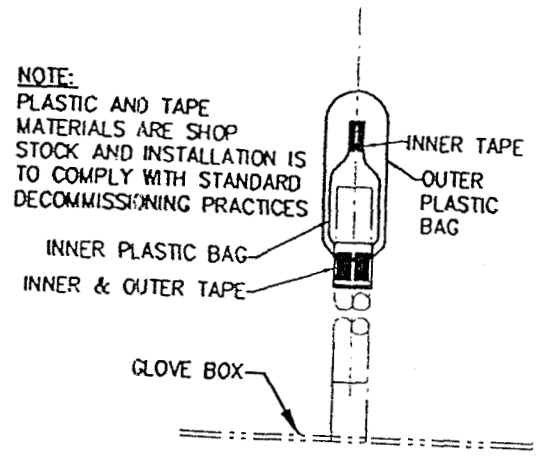
ROCKY FLATS PLANT
GOLDEN, COLORADO
PROCESS PIPING REMOVAL–SYS. 32
SCRUB ALLOY

SIZE	DRAWING NUMBER	SHEET
B	SK-T0100291-X04	OF

Figure 5: System #32 – Termination Details

NOTES:

1. SEE SK-T0095099-X01, -X02, X03, & -X04 FOR TERMINATION POINT LOCATIONS.
2. FIELD VERIFY ALL SIZES.



1 DETAIL – OPTIONAL
SCALE: NONE

APPROVED FOR USE
T0100291

NAME TITLE

SIGNATURE DATE

DRAWN VAN EGMOND	DATE 3/8/99	U.S. DEPARTMENT OF ENERGY
CHECKED	DATE	ROCKY FLATS AREA OFFICE GOLDEN, COLORADO
CLASSIFIED		ROCKY FLATS PLANT GOLDEN, COLORADO
BLDG/FACILITY 771		PROCESS PIPING REMOVAL-SYS. 32
ROOM/AREA 153,180K,114,149, 146		SCRUB ALLOY – TERM. DETS.
GRID COORD/COL NO.		SIZE / DRAWING NUMBER / SHEET
SCALE NONE		B SK-T0100291-X05 OF
CAD FILE SA-X05		

20/20